

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference PCT04005 | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/JP2004/008447 | International filing date (day/month/year) 16.06.2004 | Priority date (day/month/year) 02.07.2003 |
| International Patent Classification (IPC) or national classification and IPC F16C13/00, B29D31/00, D21G1/02 | | |
| Applicant YAMAUCHI CORPORATION et al | | |

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| 1. | This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. | This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. |
| 3. | This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. | This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application |

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| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rule 12.3 and 23.1(b))
 - ☐ publication of the international application (Rule 12.4)
 - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☒ the international application as originally filed/furnished
 - ☐ the description:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☐ the claims:
 - nos. _____ as originally filed/furnished
 - nos.* _____ as amended (together with any statement) under Article 19
 - nos.* _____ received by this Authority on _____
 - nos.* _____ received by this Authority on _____
 - ☐ the drawings:
 - sheets _____ as originally filed/furnished
 - sheets* _____ received by this Authority on _____
 - sheets* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
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| 1. Statement | | | |
| Novelty (N) | Claims | 1-13 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-13 | NO |
| Industrial applicability (IA) | Claims | 1-13 | YES |
| | Claims | | NO |
| 2. Citations and explanations (Rule 70.7) | | | |
| <p>Document 1: JP 1-260092 A (Yamauchi Kabushiki Kaisha), 17 October 1989, entire text</p> <p>Document 2: JP 57-146912 A (Yamauchi Gomu Kogyo Kabushiki Kaisha), 10 September 1982, page 3, upper left column, line 19 to upper right column, line 18; page 4, upper left column, line 15 to lower left column, line 1</p> <p>Document 3: JP 4-191516 A (Kabushiki Kaisha Masuda Seisakusho), 9 July 1992, page 4, upper right column, lines 1 to 14</p> <p>Document 4: JP 57-35095 A (Matsushita Electric Works, Ltd.), 25 February 1982, entire text</p> <p>Document 5: JP 57-24216 A (Fuji Photo Film Co., Ltd.), 8 February 1982, page 2, upper left column, lines 1 to 8</p> <p>The invention set forth in claims 1 to 3, 7, 11, and 12 does not involve an inventive step in the light of document 1 (entire text) cited in the international search report, document 2 (page 3, upper left column, line 19 to upper right column, line 18 and page 4, upper left column, line 15 to lower left column, line 1) cited in the international search report, and document 3 (page</p> | | | |

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4, upper right column, lines 1 to 14) cited in the international search report.

Document 2 discloses a method of manufacturing a non-woven fiber aggregate impregnated with a thermosetting resin for use as a resin roller, wherein the non-woven fiber aggregate is impregnated with a thermosetting resin in liquid state as said aggregate is being conveyed.

Document 3 discloses the use of a fiber material bonded with a binder as a tape-like non-woven fiber aggregate for use as a resin roller.

Meanwhile, each of the inventions disclosed in documents 1 to 3 pertains to a resin roller having a non-woven fiber aggregate, and thus, a person skilled in the art could easily conceive of employing the feature of impregnating a non-woven fiber aggregate with a thermosetting resin in liquid state as said aggregate is being conveyed, disclosed in document 2, and the feature of using a fiber aggregate comprising a fiber material bonded with a binder, disclosed in document 3, in the resin roller manufacturing method disclosed in document 1.

The invention set forth in claims 4 to 6 does not involve an inventive step in the light of documents 1 to 3 and newly cited document 4 (entire text).

Document 4 discloses a feature wherein a paper base material is impregnated with a thermosetting resin, and the viscosity of the thermosetting resin is lowered as the paper base material is being conveyed, thereby promoting saturation of the paper base material with the thermosetting resin.

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Meanwhile, non-woven fiber aggregates according to the inventions disclosed in documents 1 to 3 and the paper base material according to the invention disclosed in document 4 all have the shared features of being formed with no woven fibers and of being impregnated with a thermosetting resin. Therefore, a person skilled in the art could easily conceive of adapting the inventions disclosed in documents 1 to 3 by lowering the viscosity of the thermosetting resin as the non-woven fiber aggregate is being conveyed, thereby promoting saturation of the non-woven fiber aggregate with the thermosetting resin.

Moreover, setting the timing of the lowering of the viscosity of the thermosetting resin to after the non-woven fiber aggregate has been conveyed and when it is being wound onto a roller core is merely a feature fittingly determined at the discretion of a person skilled in the art.

The invention set forth in claims 8 to 10 does not involve an inventive step in the light of documents 1 to 3. Document 2 discloses a feature wherein a non-woven fiber aggregate is manufactured using a fiber material in a wet process, namely, sheet making; a feature wherein the non-woven fiber aggregate must have a tensile strength of at least a specified value; and a feature wherein the non-woven fiber aggregate has a basis weight range that overlaps with 30 to 100 g/m².

The invention set forth in claim 13 does not involve an inventive step in the light of documents 1 to 3 and document 5 (page 2, upper left column, lines 1 to 8)

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cited in the international search report. Document 5 discloses the formation of an outer tube over a lower wound layer without an adhesive material layer interposed therebetween.